Keep the Promise, Eliminate POPs

IPEN Guide to New POPs

May 2009

The Stockholm Convention on Persistent Organic Pollutants (POPs) is a living treaty that recognizes the need to take global action on chemicals that are a source of concern because of their persistence, bioaccumulation, long-range environmental transport, and toxicity. >>>

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>>> During the negotiations, the international community understood that there were likely to be more POPs than the twelve substances originally covered by the treaty. Therefore, the Convention established a science-based process for evaluating candidate POPs which recognizes that lack of full scientific certainty should not prevent a candidate substance from proceeding in the evaluation or listing. For COP4, an expert committee of the Convention, the POPs Review Committee (POPRC), has recommended nine new substances for listing.

When delegates discuss adding these substances, some may question the need for listing and o thers may even try to weaken the treaty by creating exemptions to continue uses that benefit certain industries. However, the Convention clearly mandates Parties to decide on listing "in a precautionary manner." This means prioritizing the Convention's promise to protect human health and the environment from POPs.

Experts of the POPRC have determined that each of the nine new candidate POPs is likely as a result of long-range environmental transport to lead to significant adverse effects on human health and/or the environment such that global action is warranted. All nine substances should be added to Annex A of the Convention for global elimination.

IPEN Recommendations

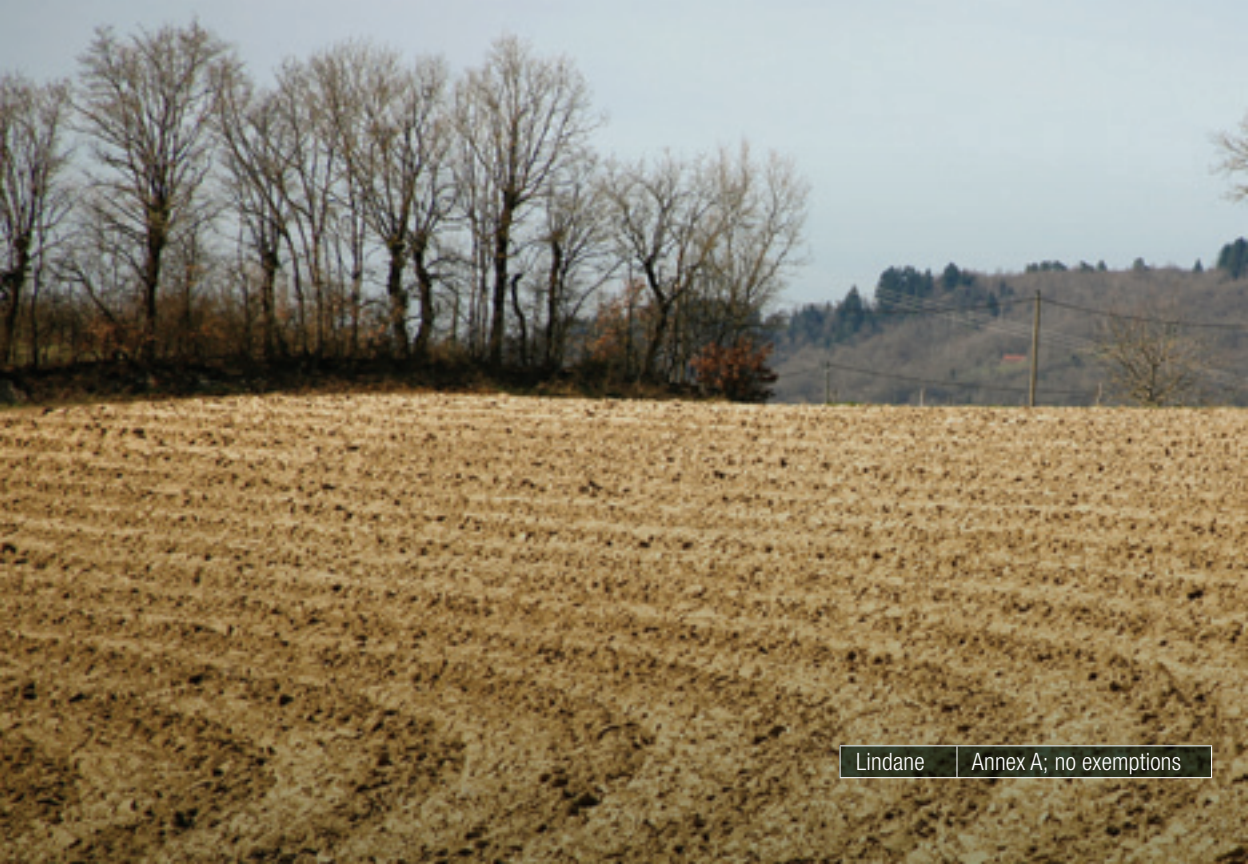
Substance	Listing
Alpha hexachlorocyclohexane (Alpha HCH)	Annex A; no exemptions
Beta hexachlorocyclohexane (Beta HCH)	Annex A; no exemptions
Chlordecone	Annex A; no exemptions
Hexabromobiphenyl (HBB)	Annex A; no exemptions
Lindane	Annex A; no exemptions
C-Octabromodiphenyl ether (OctaBDE) Hexabromodiphenyl ether (HexaBDE) Heptabromodiphenyl ether (HeptaBDE)	 Annex A; no exemptions Annex A; no exemptions
C-Pentabromodiphenyl ether (PentaBDE) Tetrabromodiphenyl ether (TetraBDE) Pentabromodiphenyl ether (PentaBDE)	 Annex A; no exemptions Annex A; no exemptions
Pentachlorobenzene (PeCB)	Annex A and Annex C; no exemptions
Perfluorooctane sulfonate (PFOS) PFOS and its salts Perfluorooctane sulfonyl fluoride (PFOSF)	Annex A; no exemptions for dispersive uses; all other exemptions time-limited with a Part III created in Annex A if necessary that outlines exemptions and phase-out timelines as done for PCBs in Part II

Substances That Are No Longer Produced

Both Chlordecone and Pentachlorobenzene (PeCB) are no longer intentionally produced. Chlordecone is a pesticide that is closely related to mirex and is highly toxic to aquatic organisms. It has been used extensively in the tropics for the control of banana root borer and also in household products such as ant and cockroach traps. The POPRC concluded that since production ended some decades ago there are now alternatives to Chlordecone available with comparative efficacy and without cost implications. Due to its POPs properties, Chlordecone should be listed in Annex A with no exemptions. This would regulate remaining stocks and prevent future reintroduction of production and use.

Pentachlorobenzene (PeCB) is highly toxic to aquatic organisms and has been used in the past as a pesticide and flame retardant as well as with PCBs in dielectric fluids for electrical equipment. Since these uses ended some time ago, the POPRC concluded that alternatives are available with comparable efficacy, and without cost implications. PeCB is also unintentionally produced and released to the environment by many of the sources that produce dioxins and furans. PeCB should be listed in Annex A and Annex C. Listing PeCB in Annex A with no exemptions would prevent reintroduction of production and use, and regulate wastes containing it. Listing it in Annex C would address the unintentional production of PeCB, subject it to the measures in Article 5, and establish the goal of continuing minimization and, where feasible, ultimate elimination of releases.

Chlordecone	Annex A; no exemptions
Pentachlorobenzene (PeCB)	Annex A and Annex C; no exemptions



Lindane	Annex A; no exemptions

Lindane and Its Isomers

Lindane has been used broadly in seed and soil treatment but due to its toxicity has been banned in 52 countries and severely restricted in 33 others. Reported lindane impacts in animal studies include toxicity to the liver and immune system, along with reproductive and developmental effects. Most evaluations have concluded that lindane might cause cancer. In addition to agricultural uses, lindane has also been added to shampoo to control head lice in children. Adverse health effects in children associated with this use include seizures. This has spurred the development and use of more effective and less toxic alternatives that are, in general, technically feasible, cost-effective, efficient, and available. Lindane's related isomers, alpha hexachlorocyclohexane (alpha HCH) and beta hexachlorocyclohexane (beta HCH), are waste products generated during production of lindane. Millions of metric tons of toxic alpha HCH and beta HCH wastes need to be cleaned up. All three substances should be listed in Annex A of the Convention without exemptions.

Brominated Flame Retardants

Three brominated flame retardants recommended for listing include hexabromobiphenyl (HBB), components of commercial pentabromodiphenyl ether (C-PentaBDE), and components of commercial octabromodiphenyl ether (OctaBDE). All three have been used as additives to resist the spread of fire in commonly used consumer products.

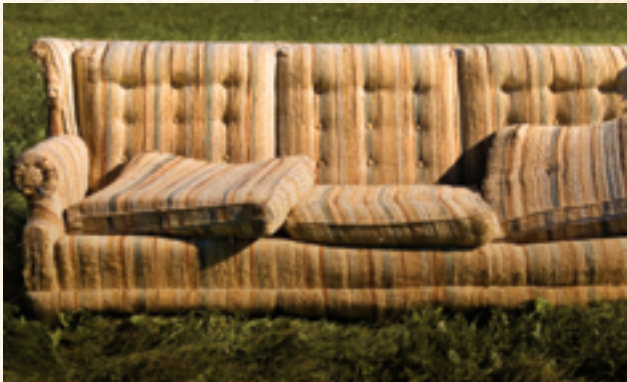
HBB is no longer in production but was formerly used in electrical products and in polyurethane foam for auto upholstery. Since HBB is no longer produced, efficient, cost-effective alternatives have already been implemented. HBB has been nominated to the Stockholm Convention for listing in Annex A to prohibit unknown production, prevent reintroduction, and regulate management and disposal of wastes.

C-PentaBDE has been used as a flame retardant additive in flexible polyurethane foam for furniture and upholstery and in electronic equipment. Vulnerable ecosystems and species are impacted by PentaBDE and it has been found at levels high enough to be of concern within individual members of some endangered species. Toxicological studies have demonstrated it has reproductive toxicity, neurodevelopmental toxicity and effects on thyroid hormones in aquatic organisms and in mammals. Humans can be exposed through contaminated food; through the use of products that contain PentaBDE; and from contact with indoor air and dust which is frequently contaminated with PentaBDE. PBDEs have been found in umbilical cord blood, breast milk, breast fat, as well as adult blood and fat. Studies have found that the highest levels are in children under four years old. The POPRC

concluded that suitable, more environmentally benign alternatives exist for all uses of C-PentaBDE so a ban could cover all sectors. The POPRC has recommended listing key components of the mixture containing four and five bromines in Annex A (TetraBDE and PentaBDE).

C-OctaBDE is a mixture of several polybrominated diphenyl ethers including substances containing six, seven, eight, and nine bromines. Increasing evidence suggests similar toxicological profiles and therefore, equivalent hazards and concerns, between PBDEs such as OctaBDE and PCBs. The POPRC has determined that the availability of usable and economically viable substitutes for all uses of C-OctaBDE has already been demonstrated in practice. The POPRC has recommended listing key components of the mixture, HexaBDE and HeptaBDE (six and seven bromines), in Annex A of the Convention after concluding that they are likely (as a result of long-range environmental transport) to lead to significant adverse human health or environmental effects.

Hexabromobiphenyl (HBB)	Annex A; no exemptions
C-Octabromodiphenyl ether (OctaBDE) Hexabromodiphenyl ether (HexaBDE) Heptabromodiphenyl ether (HeptaBDE)	Annex A; no exemptions
C-Pentabromodiphenyl ether (PentaBDE) Tetrabromodiphenyl ether (TetraBDE) Pentabromodiphenyl ether (PentaBDE)	Annex A; no exemptions



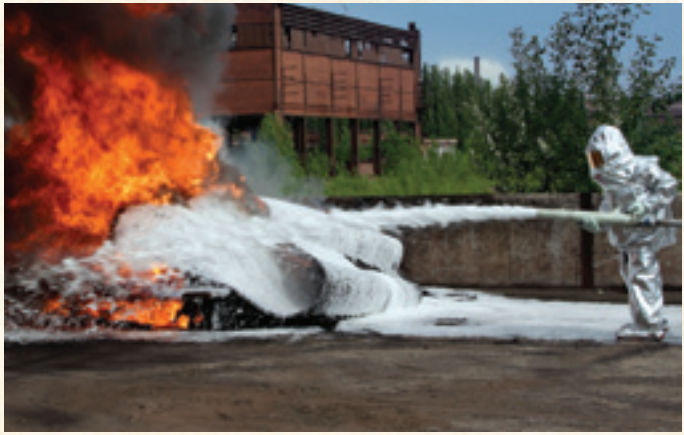
PFOS

PFOS and its related substances have been used in a variety of products and processes including fire fighting foams, carpets, leather goods, upholstery, packaging, industrial and household cleaning products, pesticides, photographic applications, semiconductor manufacturing, hydraulic fluids, catheters and metal plating. PFOS is extremely persistent and has shown no degradation under any environmental condition that has been tested. It is toxic to mammals and high concentrations have been found in Arctic animals, far from anthropogenic sources. PFOS is regularly detected in human blood and breast milk. For example in one study of 299 infants, PFOS was found in the blood of 297 of them. In addition to PFOS, the POPRC identified PFOSF (perfluorooctane sulfonyl fluoride) as the most common starting material for PFOS derivatives and a substance that would eventually degrade to PFOS. This means that if PFOSF is not controlled by listing in the Convention, then more PFOS will appear in the environment and in newborns. The POPRC recognized that action needs to be taken on both substances.

Unfortunately, the POPRC could not decide on whether to recommend listing PFOS and PFOSF in Annex A, the elimination annex; or Annex B, which would subject the substances to restrictions but not necessarily elimination. IPEN believes that PFOS and PFOSF should be listed in Annex A. An Annex B listing would permit a potentially large number of permitted uses, and would allow them to continue for an indefinite period of time. This would likely result in substantial and continuing increases in the amount of extremely persistent PFOS present in the global environment. Based on the information it received, the Committee concluded

that technically feasible alternatives may not be available for certain uses of PFOS. An Annex A listing would permit some continued use of PFOS for certain uses. These would be permitted based on time-limited, possibly renewable, exemptions. These exemptions could be described in a Part III of Annex A that outlines exemptions and phase-out timelines as done for PCBs in Part II.

Perfluorooctane sulfonate (PFOS) PFOS and its salts Perfluorooctane sulfonyl fluoride (PFOSF)	Annex A; no exemptions for dispersive uses; all other exemptions time-limited with a Part III created in Annex A if necessary that outlines exemptions and phase-out timelines as done for PCBs in Part II



Conclusion

The POPRC has evaluated all nine substances and concluded that all are likely as a result of long-range environmental transport to lead to significant adverse effects on human health and/or the environment such that global action is warranted. In addition, the Committee decided that adequate alternatives exist for eight of the substances. In the case of PFOS, the POPRC recommended that exemptions for a limited number of certain uses will be sufficient while alternatives and technical solutions are developed. IPEN believes that all nine substances should be added to Annex A of the Convention for global elimination.

Stockholm Convention text
http://chm.pops.int/Convention/tabid/54/language/en-US/Default.aspx#convtext

The Stockholm Convention POPRC web page
http://chm.pops.int/Convention/POPsReviewCommittee/AboutPOPRC/tabid/221/language/en-US/Default.aspx

POPRC recommendations
http://chm.pops.int/Convention/POPsReviewCommittee/RecommendationsofthePOPRC/tabid/440/language/en-US/Default.aspx

IPEN web page on the work of the POPRC
http://www.ipen.org/ipenweb/firstlevel/poprc.html

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